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TRANSLATION

THE SUIT OF THE COSMONAUT

By

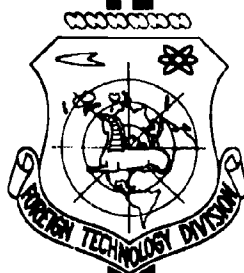
B. L. Rudoy

FOREIGN TECHNOLOGY DIVISION

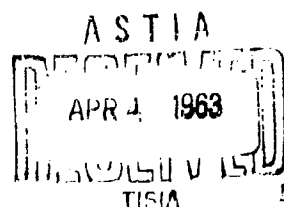
AIR FORCE SYSTEMS COMMAND

WRIGHT-PATTERSON AIR FORCE BASE

OHIO



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UNEDITED ROUGH DRAFT TRANSLATION

THE SUIT OF THE COSMONAUT

BY: B. L. Rudoz

English Pages: 3

SOURCE: Russian Book, Novaya Zhizn'
Stekla, Series IV, Tekhnika,
Nr. 2, 1963, pp 27-28

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PREPARED BY:

TRANSLATION SERVICES BRANCH
FOREIGN TECHNOLOGY DIVISION
WP-AFB, OHIO.

The Suit of the Cosmonaut

by

B. L. Rudy

"Age of High Temperatures and Pressures", as is often said, having in mind modern technology. Many processes in metallurgy and chemistry are conducted at very high temperatures. Without reliable protection against heat is impossible to work in hot workshops, to control technological processes, to extinguish fire. Sometimes protection is acquired with the aid of screens and air curtains, shielding people from the aggregate. But such a protection is not always possible.

Reliable protection against high temperatures is necessary not only during fires. When a steam boiler goes out of commission, it must be repaired as soon as possible. But a boiler is usually hot, and it is necessary to wait for a long time, before the job of repairing can begin.

Analogous conditions are also created during the damaging of various thermal units as for example, brick kilning furnaces. In all such instances it is extremely important to make the repair rapidly, but also here the high temperature forces into long idleness. To carry on an effective struggle with fire, to repair thermal and chemical installation in operation is impossible without reliable individual means of protecting against heat.

As a material for preparing clothing and underwear, glass fiber at present time cannot compete with fabrics made of natural fibers, because it irritates the skin and does not possess sufficient pliability.

But there is a case where this fabric is irreplaceable. Glass fiber fabric, coated with a thin layer of aluminum, thinner than foil, is used for manufacturing

special suits, which are used as special clothing for fire fighters, metallurgical workers and workers in other branches of industry. The surface of such an ultra-light weight suit reflects about 90% of the entire irradiating heat, and the remaining part of the heat is scattered in the glass fiber layer.

A glass fiber suit allows the laborer to work for several minutes in places where the temperature is very high. Mine rescuers, for example, can penetrate to subterranean fires, rapidly extinguish same, to carry on rescue operations.

The protective suit has found broad application during hot repair of furnaces, boiler installations etc. It was found that glass fiber fabric serves as man's reliable protection against penetrating radioactive rays. Reliable clothing (protective) is manufactured from glass fiber manufactured from glass compounds containing boron, lead and cadmium. Screens, coveralls and aprons protecting workers of atomic technology and medicinal personnel against the effects of radioactive rays, are now often manufactured not from lead sheets, but from light glass fiber.

Fabrics made of glass, containing boron and cadmium, go for the making of screens absorbing neutrons. As protection against thermal radiation and gamma radiation were found to be glass fabrics made of leaded glass.

The new suit can be useful also for the cosmonaut who is confronted by an, invisible with the naked eye, danger - charged particles of the terrestrial of the terrestrial radiation belts, and cosmic rays as well. In special suits made of glass fabric, people will step out from rocket planes, the first interplanetary travellers. The reliable material, of which the cosmonaut's suit was made will be able to protect daring planet researchers against higher temperature and radiation.

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